Virtual System Design Environment

https://vsde.nasa.gov

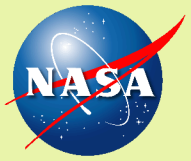
"A Collaborative Tool Dilemma:

The Virtual System Design Environment (VSDE)"
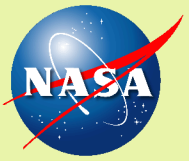
presented for

GSFC Systems Engineering Seminar

February 8, 2005

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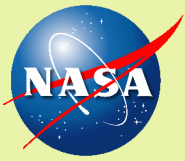5. The VSDE Solution
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Dilemma Statement

Projects have many components, with multiple teams and individuals to complete those components.

Each of those teams utilize different hardware/software on numerous networks, are in different locations and with varying levels of expertise.

The dilemma is how to make technology advance our work effort without the issues mentioned above hindering progress.

Teams Defined

- Team make-up reflects the following the work effort and usage characteristics:

  - <u>Projects</u> – usage is constant, wide range of tools and applications, 50+ users

  - <u>Organizations</u> – single tool, predictable, focused, administrative functions, 75+ users

  - <u>Study Groups</u> – short term, usage in short bursts, 10-20 users

  - <u>Working Group/Committees</u> – short term usage, 5-25 users

  - <u>Proposals</u> – usage corresponds with timeline, 24/7 usage, # of users varies
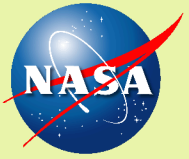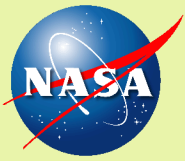
Requirements

- Teams have requirements and factors that must be considered before deciding on a IT solution,

    - Requirements
        - Provide File Sharing and Storage
        - Must be accessible to all team member regardless of physical location or system platform
        - Store and display team information
        - Provide a calendar function

    - Factors for Consideration
        - Cost
        - Security
        - Maintenance Required
   - Reliability
        - Usability
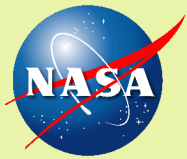
Comparison

|	Number of users	Security	Usage	Cost
Projects	50+	High	Constant over time	Have an IT budget
Organizations	75+	Medium	Predictable	Limited Funding
Study Groups	10-20	Medium	Usage in short bursts	Limited Funding
Working Group/ Committees	5-25	Medium	Usage over a short period of time	Limited Funding
Proposals	15 - 75	High	Heavy at Times	Have an IT budget

Usage Tracking
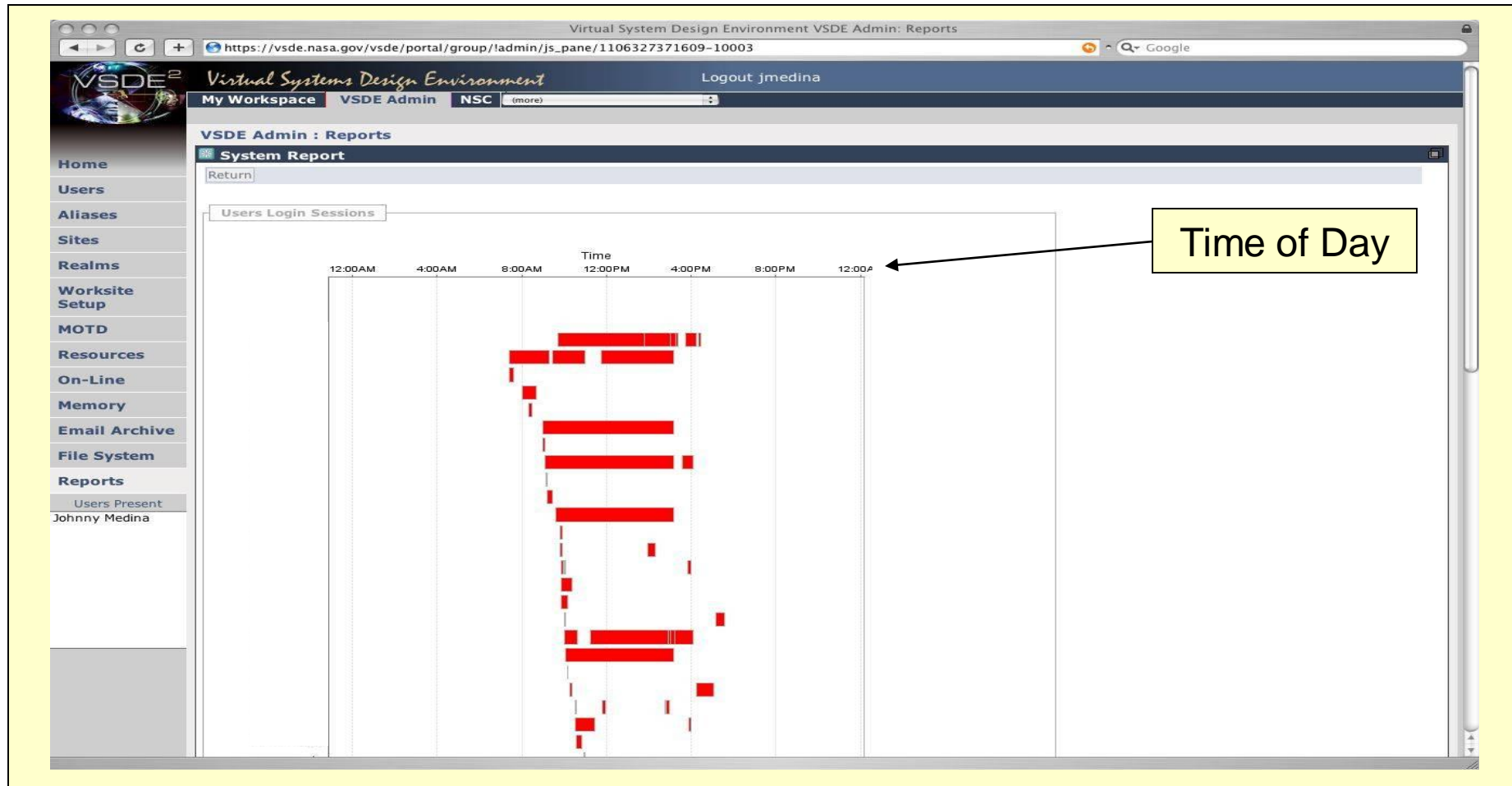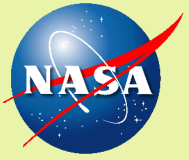
Teams Looking to Implement
A Collaborative Tool
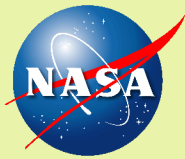# Present Different Requirements
And Needs
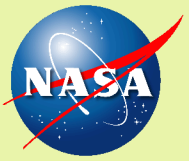
Virtual System Design Environment

- Provides a single access point for all resources used in a collaborative environment
- Acts as a resource to unify a team and provide common framework for teams to expand and define as they evolve
- Incorporates online chat, real-time file sharing, remote application sharing, and workgroup components in one central location
- Provides real-time access to:
  - A single knowledge repository for all mission/team data
  - Collaborative tools; address book, electronic mail, application sharing, real-time chats, file management, and threaded discussions
  - Team & project management tools; action item, calendaring, and announcements tools
 - Enables access to team and group tools and resources
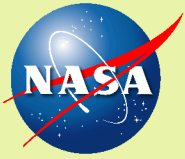
Introduction to VSDE

- **VSDE is a product of**:
  - Missions Engineering & Systems Analysis (MESA) Division – Code 590
  - Systems Engineering Services & Advanced Concepts (SESAC) Branch – Code 592

- **Release Dates**:
  - Version 1.0 – November 2000
  - Version 2.0 – September 2004
  - Version 2.1 – January 2005

- **Current usage**:
  - 145 groups
  - 2300 users

- **Users**:
  - GSFC, LaRC, HQ, AMES, JPL, Universities, Contractors

The VSDE Solution To The Collaborative Tool Dilemma
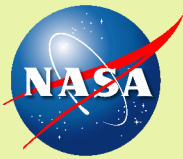
- The goal during development of VSDE Version 2.0 was to develop capabilities based on lessons learned from previous versions:

    - Provide the user a single interface that rolls-up all the information for all the groups that they are a member.
    - Provide secure access to data using SSL
    - Utilize Open Source software whenever possible to reduce cost
    - Increase usability by providing simplified interfaces for all tools
    - Continue with idea of distinct groups, but allow information to be passed between groups if desired
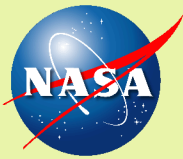
A Single Point-of-Access

• **VSDE provides a single point of entry into team information and applications**

• **It is accessible on the public domain, which means that if you have access to the internet, have an active username and password, you have access to VSDE.**

• **VSDE is secure with the use of 128-bit encryption**

VSDE Collaboration Features Allows You To…..

Address Book:
Store Team member's information including, Name, Location, Job Title and Email Address

Files:
Save and Share files with the VSDE Drag and Drop File System

Calendar:
With the VSDE calendar you can view, update or change a meeting   or event.

Access Control:
VSDE allows the Administrator to limit a users access to specific groups as well as restrict access to files and folders within a group

VSDE² — Virtual Systems Design Environment — Logout dspalding

My Workspace | VSDE Admin | LRO Instruments | (more)

My Workspace : Home

VSDE2 Message Center

Options…

Scheduled Maintenance for VSDE

The VSDE team will be conducting website maintenance during the following dates/times,

Start: 5:00 pm on Friday, January 28, 2005
Ending: 8:00 am on Monday, January 31, 2005
Impact to Users: VSDE will be inaccessible to users during the maintenance period

If you have any questions, contact Dale Spalding at (301) 286 – 3530 or Dspaldin@pop500.gsfc.nasa.gov

(Dale Spalding - Jan 20, 2005 2:12 pm)
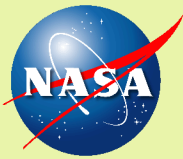
Recent Announcements

There are currently no announcements at this location.

Home
All Files
Calendar
Announcements
Membership
Worksite Setup
My Profile Editor
Help
Users Present
Dale Spalding

….Organize Your Project Data

Team Information

The VSDE Address Book provides the following information,
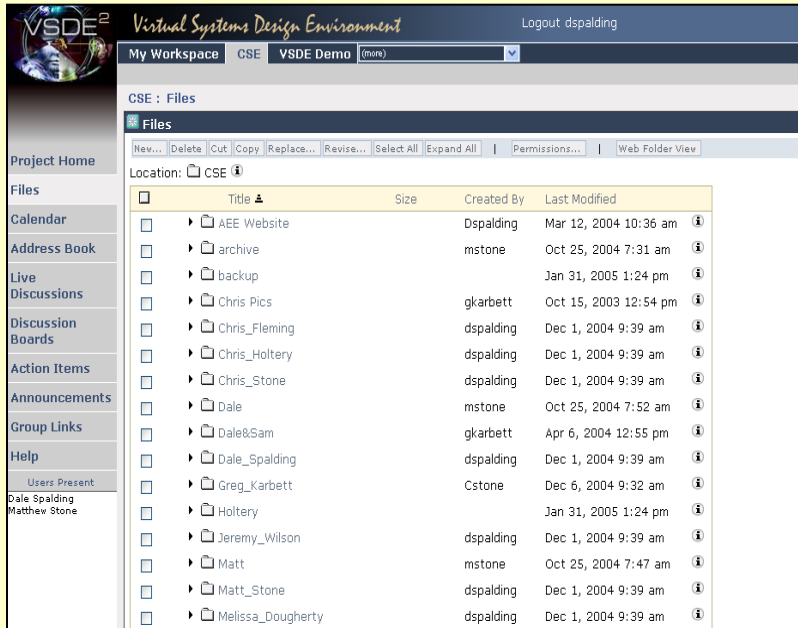
• **Who are the members of the team/group?**

• **Where are team members located and how can I get in contact with them?**

• **What are the team members Job Title or specialty?**

Tools:
- Launch E-mails
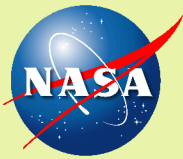- Sort on Role Type and Job Title
- Export to Microsoft Excel
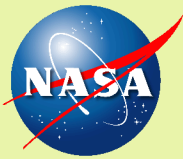
File Management System

The VSDE File Management System provides the following information,

- **Who created the file**
- **When was it created**
- **Last modified date**
- **Size of the file**

- The **Web Distributed Authoring and Versioning (WebDAV)** application protocol, users can collaborate on files across the web.

- Transparent to users, WebDAV provides overwriting prevention, metadata capture, and the capability to write and retrieve files.

- It also provides the ability to Drag and Drop files between the user's systems and the VSDE without the need to open a web browser.

Action/Issue Management

In the VSDE Action/Issue Management the user is given the ability to,

- Enter in project actions and assign one or more team members to complete the action.

- Responsible persons are alerted by email of the action and its details.

- The email includes a hyperlink that when selected directs the user back into the content page so that they can view, close or make comments.

The VSDE keeps a historical record of all responses to the action and any status changes.
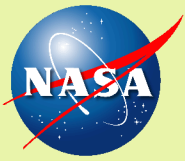
Discussion Board
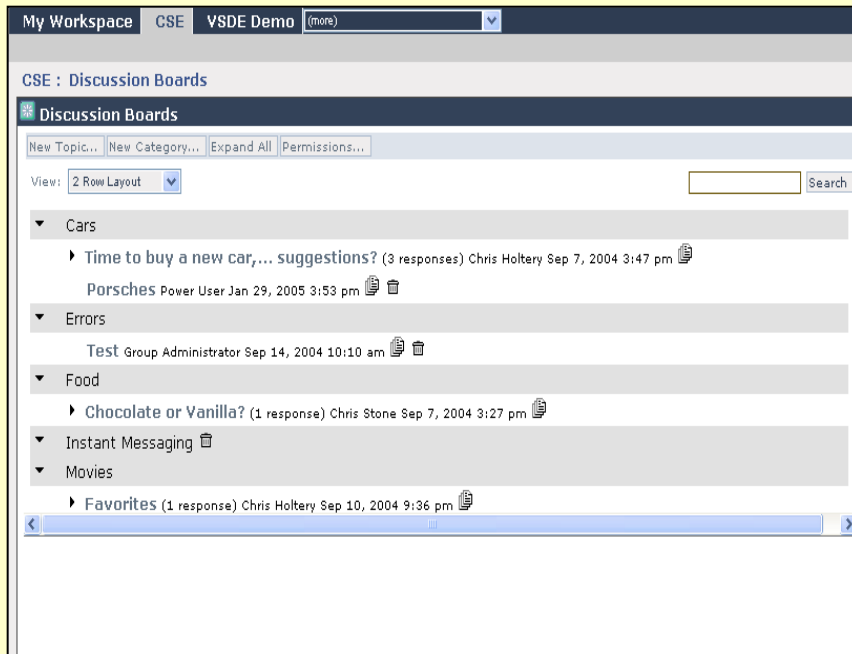
In the VSDE Discussion Board the user is given the ability to,

- Post a topic, which is then available for all group members to review and post responses.

- All inputs are captured and stored for future review.

Tool Usage Tracking

System Capabilities

- **Core Framework**
  - Java solution built on Java Web services, server side Java (servlets), and client side modules
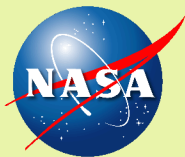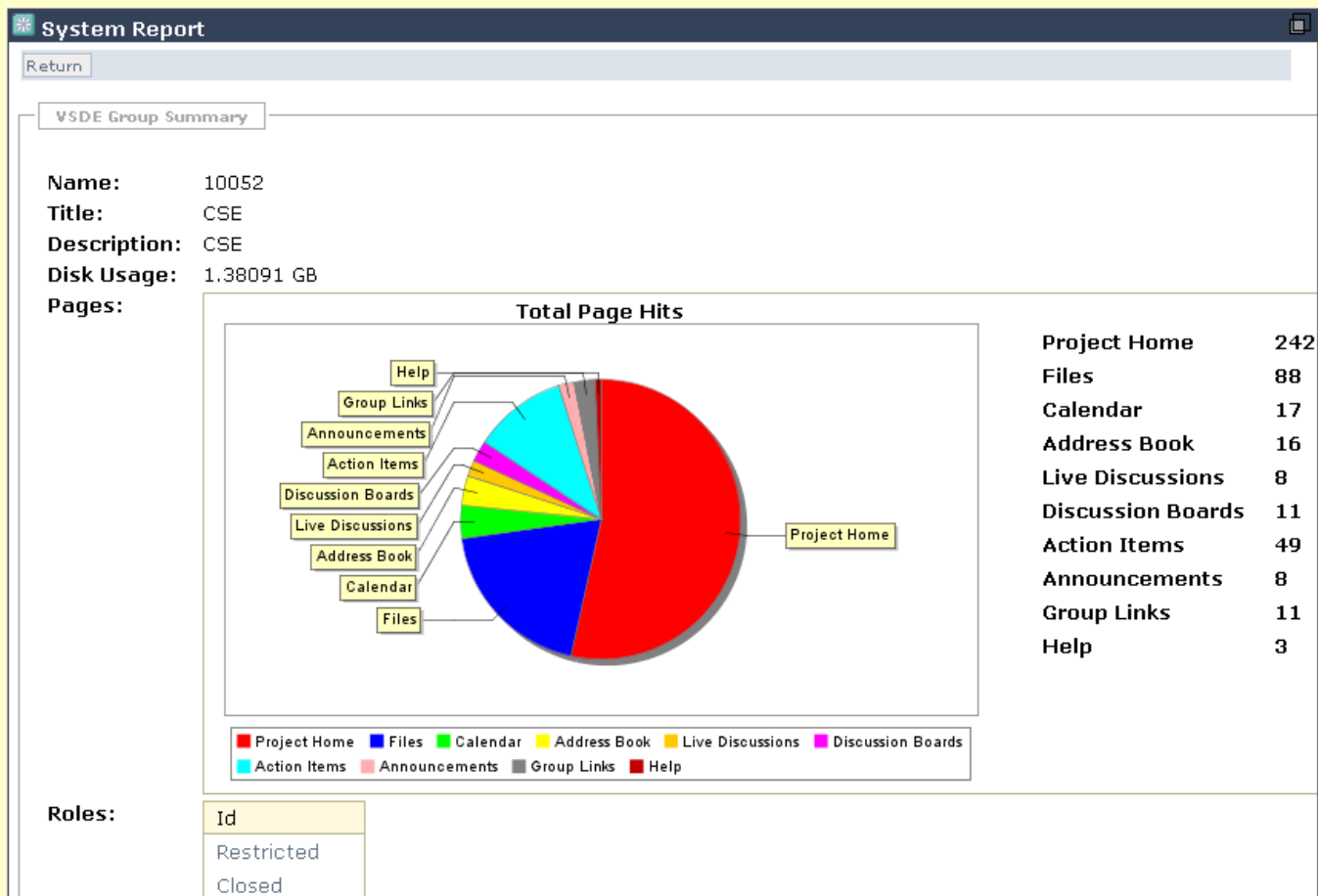 - Pulls data from data sources and presents them via standard views in Internet Explorer and Netscape Navigator

- **Group and Personal Links**
  - Groups can establish URL links to resources on network
  - Individuals can establish personal URL links

- **Announcements**
  - Ability to post group wide notices and information to entire team
  - Displayed on entry into User Portal

- **Group Address Book**
  - Access to user information for all members of team. Includes names, e-mail addresses, and phone numbers. Sorting and access to view roles within groups

- **File Management**
  - Allows uploading and downloading of all file types
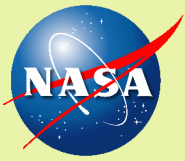 - Management accomplished via user rights per folder
- **Collaboration**
  - Allows message communication and data collaboration
- **Calendar**
  - Create personal and group events
  - Sends out notification reminders and announcements
- **Action / Issue Management**
  - Enables users to add/assign items to other team members
  - Sends out notification reminders
  - Direct HTML content and linkable access from messages and announcements
- **Discussion Forum**
  - Allows group members to post questions and have other group members provide answers
  - Similar to most on-line newsgroups

DEMO

Future Capabilities

- **Configuration Management (CM) Tool** – Release Date - September 30, 2005
  - Features will include:
    - **Document check-in/out** – This automatically protects a document from being changed by more than one user at a time – essential for workgroup collaboration.
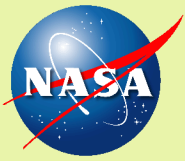   - **Version control** – Maintains a complete history of every version of a document – allowing document editors to easily chronicle and revert changes.
    - **File-level access control** – A security requirement for any shared environment – controls read, write, and administrative permissions for every document and directory.
    - **Integrated search** – Allows a user with access rights to query documents and files stored in the system to improve knowledge sharing and content re-use.
    - **Meta-Data Capture** - the system will capture Document ID, Author, Timestamp, File Type, File Size, Reference Document IDs, Document Description

- **Group Site Search**
  - Features will include:
    - **File Search** – Allows user to search for key words in file titles, meta-data and text.
    - **Tool Search** – Provides the ability to search for key words or phrases in the VSDE tools (Files, Address Book, Actions etc.) and presents the results under the tool title.
    - **Multiple Group Site Search** – Allows the user to select multiple groups, multiple tools and search across all the perimeters selected by the user.
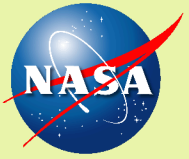
Future User Services

- Scheduled for FY05
  - Creation of VSDE User group
  - Additional Training and Online services
 - Completion of the online VSDE Support group

Conclusion - Key Messages

- VSDE are here and available for NASA to use
  - Costs are associated based on additional implementations and customizations
  - Staff is highly skilled and committed to support users
  - NASA is ready for these capability and needs them
  - Many projects re-implement and repeat research which could be integrated
  - Source is in Software Release process and soon ready for open release to US entities

- Integration into a single framework not only makes sense, it is cost effective
  - Virtual integration into common interfaces increases learning curves, and increases time to productivity for the 'next' project or team
  - Single sign-on is a possibility for many of the common mission / team infrastructure
  - Access and collaboration with such items as myGoddard and InsideNASA are easy and will happen
  - Extension of the portals begins to look like a mission/team tool, rather than and external capability
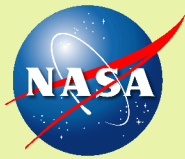
Conclusion - Key Messages (cont.)

- Operations
  - Collaborative environment for mission operations will help NASA to maintain effective spacecraft operations while mission staff and costs are shrinking
  - Allows distributed mission teams to interact in day to day spacecraft operations
  - Gives mission operator ability to quickly consult with experts in identification and resolution of anomalies
  - Enables sharing of mission operations control centers and staff resources for more than one mission
  - In future will support missions with anomaly investigation and access to life-cycle resources in operations phase as project populates project taxonomy.
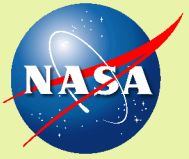
Contacts

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    - 1-301-286-3066

- Dale Spalding, VSDE Lead
    - 1-301-286-3530

Systems Engineering Services and Advanced Concepts